

(19)
(12)

(KR)
(A)

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(43)

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JP-P-1998-000753171998 03 24(JP)
JP-P-1998-001179541998 04 28(JP)

(71)

가 가가 22 22

(72)

5-7-1
가 22-15-206
가 1-1 -

231-1-303
1-23-12
가
4-19-15
1-5-5-905

(74)

가 3-605-16

(54)

:

17		8	/		
18		8	/		
19a	19f	8	/	18	F-F
20a	20d	8	/		
21	20				
22	8	/			
23					
24	8	/			
25		9	/		
26	9	-			
27					
28	9	/			
29		9	/		
30		10			
31	30	G-G			
32		11			
33	32	H-H			
34		12			
35	34	I-I			
36		12			
37		13			
38a	38d	13		, 37	J-J
39		14			
40a	40d	14		, 39	K-K
41		15			

[illegible]

43 16

44a 44f 16 , 43 M - M

45 17

46 45 N - N

47 17

48a 48c 18

49a 49c 18

50a 50c 18

51a 51b 18

52

< >

1 :

2 :

3 :

4 : TFT

5 :

6 :

7 :

8 :

9 :

10 :

11 :

12 :

13 :

14 :

15 :

16 :

17, 21 :
18, 23 :
19 :
20 :
22 :
24 : 2
25 :

가 (OA)
(electronic schedulers)
VCR
, CRT (EL)
50%
(ambient light)
(STN) (TN)
가
가 가 가
가 가
가
가
가, 7-333598
(semi-transmissive reflection film)

52 (32), (33), (34), (35), (36), - - (30a 30b), (31),
 (38), (39), (40) (MIM) (37),
 (38)
 (38) (39)

52 , 가 , 가 가
 (38) , 가 가
 가
 (TFT) 52 /
 ,
 ,
 ,
 , MIM , TFT (numerical aperture) 가 가
 ,

가 1 , 2 , 1 2 ,
 , 1
 , 1
 , 가 , 1
 , 10% 90%
 , 1 1 , 2 , 1 2 ; ;
 , 2 ,
 , 1
 , 1
 , 가 , 1

1 , 2 , 1 , 2 ,
1 , 2 , 1 ;
;
; , 2 ,
;
1 가
가 ;
 ,
(1) 가
(2) 가 ,
가
(1)
(1) 가
(, 1)
가
가
가
가
1 1 . 2 1 a-b
1 2 , (1)
(2) (3) (1)
(2) (3) (19) (1)
(2) (3)
(TFT)(4) (2) (3) TFT(4)
(12) (2) (12) TFT(4)
) . TFT(4) (16) (5) (3) (5) (3) (6) (1)
(5) (8) (8) (7) (9) (10)
(8) (2)
(1) (22) ITO (8)
(20) (20) (2) , (22) (3), TFT(4),
가 1

, (12), (2), (8), (7), (13), (14),
 (15), (16) .

, (17) (18)
 (3) (5) .

, (3) ITO (18) (17) 가
 (18) , (17)
 . (3) .

, 가 $3\mu\text{m}$ 가 (19)
 . (19) (6) .
 , (6) .
 (19) .
 (19) , .

21) , ITO (21) (21) . (

, (21) (6) (5) .

, (23) (21) , (1) (22)
 (2), (3), TFT(4) (8) (21) (23) (23)
 . (20) (21) (23) (2)
 . (2)

(23) Al . , Ta .

4) , 2×2 , 2×2 (dichromatic pigment molecule)(2
 (1) (24) (25) , 2 (24) (10) . 2

가 1
 (20) , , (22)
 . , (20) 가 (22) 가
 .

, (1) (22) (23) TFT(4), (2) (3)
 . TFT(4),
 가 . ,
 , (disclination line) 가 .

가 .

, (23) (21) (23) (21)
가 (23) .
. .
3 4 1
, (1) (22) (20) 1
. , 가 .
3 4 (5) (22) .
(20)
1 , (1) (22) (23) (21) . ,
6 , (23) (21)
. .
(2)
2 , (23) .
5 () (19) (23) . 6 5 c-d
. .
(19) 가 , (23) .
, (19) (23) , (23) . 가
, (23)
(1) (23) 6 , (19)
, (23) 5 , 가
, (23) 6 (19) 가 .
6
(3)
3 - (guest-host method) .
7 1
2 .
- ZLI 2327 (Merck amp; Co., Inc) 0.5% S-811 (
Merck amp; Co., Inc) - 가
. , (2dr) 가 , (dt)가
. 가
, (dr) dt = 2dr (21) (dt) (23) (23)
. .
, (2dr) , 가 (dt) (,
가) 가 가 .

(dt)

(2dr)

가 (dt)가 (2dr) 가

가 1 3

1 3

가 . 가 , 가

가 .
가 .

가 .
가 .

(4)

8a 4 . 8b

8a A - A .

(45), (46), (47), (48), (49), (50), (51).

$$\begin{array}{ccccc}
 & (45) & & (44) & (46) \\
 (41) & & & (48) & (49) \\
 (45) & & & & (51)
 \end{array}$$
$$(50) \quad \text{[...]} \quad (51) \quad \text{[...]} . \quad ,$$

8b

9 8a 8b

(53), (54), (55), (56), (57), (58)

(58) (51) () (58)가

(50) ()

(58) / , , (50) ()

(50) , (50) (51) (50) (51)
(51) 가 . , .

9 (58) 가 .
, 10 (59) ((60) . (58) (50) 가 .

11a 4
11b 1a B-B .

11a 11b (51) (50)
) 8a 8b (50) (51) .

8a 8b 11a 11b , 8a
8b (43) (50) (51) (43) .

(43) (59) .
, , 가 (49) .
(41) (43) . ,

(5)
12a 5 12b
12a C-C .

5 , (50) (49) (50)
. , , .

(49) , (41) (42) 가 (44)
) (50) , . (44)
가 가 .

, ITO (44) (51) .
(49) .

4 , 가 (51) (44) , 가

(6)
13a 6 13b
13a D-D .

, (50) (41)
. 가 , (50) ,

(50) (43) (44) ,
 (51) (51) (50) . ,
 가 (50) , (50) (44)
 (51) , (50) (50)
 , 가 (41) (50) (50) (44)
 4 , 가
 , , (49) , 가
 (7)
 14a 7 . 14b
 14a E-E .
 50) , (42) (50) (42) , 가 , (,
 , (49) 가 , (50)
 (51)
 가 (50) (44) (44) 6
 (49) (44) (50)
 , 4 , 가 (51) 가
 , , ,
 , , ,
 , 가 4 7 , 가
 , 가 , 가
 , / 가
 , 가
 , 가 /
 가 , 가 , 가

가 가 .
가 .

가 가 .

(8)

8 , / .

8 .
23 .

(θ_i) (δ) 1 (θ_o) .

$$\delta = L \sin \theta_i + h \left(\frac{1}{\cos \theta_i'} + \frac{1}{\cos \theta_o'} \right) \cdot n -$$

$$\{ L \sin \theta_o + h (\tan \theta_i' + \tan \theta_o') \sin \theta_o \}$$

$$= L (\sin \theta_i - \sin \theta_o)$$

$$+ h \left\{ \left(\frac{1}{\cos \theta_i'} + \frac{1}{\cos \theta_o'} \right) \cdot n - (\tan \theta_i' + \tan \theta_o') \sin \theta_o \right\}$$

2 , θ_i' , θ_o' , L
가 , h , n 가 .

1 $\theta_i = \theta_o$ $\theta_i' = \theta_o'$ 가 , δ $\theta_i = \theta_o = \theta$ $\theta_i' = \theta_o' = \theta'$
2 .

$$\delta = h \left\{ \frac{2n}{\cos \theta'} - 2 \tan \theta' \cdot \sin \theta \right\}$$

(λ_1 λ_2) , $\delta / \lambda_1 = m \pm 1/2(m$
) $\delta / \lambda_2 = m$, 3 .

$$\delta = (1/\lambda_1 - 1/\lambda_2) = 1/2$$

3

4

.

$$\delta = (\lambda_1 \cdot \lambda_2)/2 \cdot (\lambda_2 - \lambda_1)$$

,

2 4

,

h

5

.

$$1/2 \cdot \{ (\lambda_1 \cdot \lambda_2)/(\lambda_2 - \lambda_1) \} \cdot \{ \cos\theta' / (2n - 2\sin\theta' \cdot \sin\theta) \}$$

,

,

가

.

,

,

2가

가

,

,

.

/

가

,

.

가

.

/

,

가

가 .

15

/

.

15

,

(61a)

(61)

.

(64a)

(64b)가

(64b)

(69)

(65)

(61)

.

(64a)

4a)

(64a)

(64b)

(64b)가

(61a)

(61)

,

(6

(69)

(65)

(61)

.

(65)

(69)

(64a)

(64b)

가

(65)

.

(68)

(68)

(69)

(61a)

(61)

.

(polarizing plate)(90)

(91)가

(90)

,

(91)

(68)

(68)

)

.

(69)

(69)

(69)

(69)

(91
15

(91)

(68)

(69)

(91) (apertur

e ratio) 가

(68) 가

(69) (68)

가

16 (69) (91) 90% (90)

40% 가

16 (69) (69) (69)

91) (68) (

) a((69)

b

(69) (91)

가

17 (/) 17 (91) (68)

40% (69) 50% (91) 17 (69)

(69) 가

8 / 가

18 8 / 19a 19f 18 F-F

18 19f (72) (72) (74) (74) (70)

(68) (69) (68)

(73) (72) (72)

TFT(71) (TFT)(71)가 (73)

TFT(71) 19f (77) (61) (73) (61a)

(78) (61a) (77) (61a)

(75) (78) (73) TFT(71) (74) , TFT(71)

(76) (75) (76) (81a) (73)

(78) (76) (81a) (72)

(61a) 가 (81a)

(64a) (64b) (65) (69)

(65) (64a 64b) (61) (65) (69) (65) , Tokyo Ohka Co. Ltd. OFPR-800 (65) (61) .

(69) (64a) (64b) 가 (65) (69) (79) (76) (69) Al 가 .

/ (68) ITO (68) (69) .

/ 19f (70) (69) (68) 19a .

, 19a (72) , Cr, Ta (72)(15) (73) (61) .

SiNx, SiOx (73) (61a) (61) (77) (78) (73) (61a) (a-Si), , CdSe a-Si .

Ti, Mo, Al (76) (75) (78) (78) , Ti, Mo, Al .

, (61) , 가 1.1 mm Corning Inc. 7059가 .

19b (81) (81a) (74) (81) . ,

, 19c , (74) ITO (80) .

, , (74) (74) (81) ITO (80) 가 . (74) ITO (80) (74) . (74) .

ITO (80) (68) 가 가 . (74) (68)) ,

, 19d (64a, 64b)가 (69) . 가 (68) (64a, 64b)가 (68) .

, 20a 20d (64a, 64b) .

, 20a (61) (, 19d (62) (65) (62) (spin coat method) (81a) (61) OFPR-8 500 3,000 rpm , 1,500 rpm 30 2.5 μ m .

, (62) (61) 90 30 (prebaking) .

, 20b 가 , (62) (63)가 . (63) 21 (63a, 63b) (63c)

, 20b (63)
 (63) 5 μm (63a) 3 μm (63b) 가
 2 μm
 (65)
 2.38 % , Tokyo Ohka Co., Ltd NMD-3
 , 20c 가 (64a', 64b')가 (61)
 (64a', 64b') 5 μm (63a) 3 μm
 (63b) 2.48 μm (64a') 1.64 μm (64b')가
 (63a, 63b) (64a', 64b')
 (63a, 63b)
 , 20d (64a', 64b')가 (61) 200
 가 (64a', 64b') 가
 (64a, 64b)
 , 19e (61)
 (65) OFPR-800 1,000
 3,000 rpm , 2,000 rpm
 , 가 (61) (65)
)
 19f , Al (65)
 (69) Al , Ta, Ni, Cr A
 g (69) 0.01 1.0 μm
 ()
 (68) (65) Al
 (69) (68) (65)
 , (70) (65)
 (ashing)
 가가 가
 (65) , ITO (68) Al
 (69) Mo
 (65) 가 ,
 (69)
 , (68) (74) (74) (81) (68)
 (74) (81) ITO (80) 가
 가 (69) (69)
 22
 1.5 (66) (70)
 (67) (69) (68)
 , (L1') (66) (m1) θ i (L1)
 , (m2) θ o (L2)가

, (L1') θ_i (66) 가 θ_o
 (L2') (L2) .
 (L1) (66) (L2)
 $\theta_i = 30^\circ$, $\theta_o = 20^\circ$.
 24 .
 24 가 , ,
 , (63) (63a, 63b) . ,
 , 가 (64a, 64b)가 가 가
 , 가 .
 (64a, 64b) (62) (20B 20C) (65)
 가 (69) (65) ,
 , Tokyo Ohka Co., Ltd. OFPR-800 .
 , Tokyo Ohka Co., Ltd. OMR-83, OMR-85, ONNR-20, OFPR-2, OFPR-830, OFPR-5
 00, Shipley Co. 1400-27, Torey Industries, Inc. Photoneath, Sekisui Fine Chemical Co.
 , Ltd. RW-101, Nippon Kayaku K.K. R101, R633 .
 , TFT(71) . MIM(metal - insulator - metal) ,
 , 8 , 가 ,
 , .
 , .
 가 / ,
 .
 가 ,
 , 가 가
 , 가 ,
 , 가 /
 , 가
 , 가
 가

, 가
(paper - white display)

, 가
, 가 , 가
가

가

(9)

25 9 / (100)

25 , (100) F' - F' 18 (70),
() (160), (140) . / (70)
(72), (61)
(74) (72) (74)
가 (68) 가
(69) (68) (69) ()
() (160) (162) (164) ITO (166)

() (140) (70, 160)

가 (, Merck amp; Co MJ) (140) 가

(68) (100) (69) (120R)
(120T) (120T) dt(dt = 2dr) (140) (120R) dr ,
() 가 . dt = 2dr (, dt dr dt dr
, dt 4 6 μ m , dr 2 3 μ m ,
2 3 μ m 가 (70) (69) 25
(140) , dr (100)
(70) (140) (가 (120R) (120T)

25 가 (: 8.4)가 64
() 가 가 26
(120T) (120R) 4 : 6 (68) ITO
, (69) Al (120T) (140) dt 5.5 μ m
, (120R) (140) 3 μ m

g sphere) , () LCD-5000 . Topcon MB-5 (integratin

26 , 64 (26)

가 , 가

200 25 .

가 27 28 가 ,

/

27 , 가 0 lx 8000 lx 17000 가

가 (27 3) 28 , 가 8000 lx

가 0 가 17000 lx

가 ,

/

가 ,

/

가

29 (168) 25 (160R) () (169

) (69) (120R) 가

(169) / (169) (170) (160R)

(10)

30 10 31 30 G-G

30 31 (202) (203)

(201) (202) (203)

TFT(204) (202) (203)

TFT(204) (206) (206)

가 T 가 R (206)

, ITO (207) 가 T 가 R , Al (208) (

, Al) 가 R (207 208)

(206) (206) (209) 가

(202a)

TFT(204) (202)((202a)) (210), (209),

(212), (213) n+ -Si (211) , /

가

가

- , ZLI2327 (Merck amp; Co., Inc) , S

-811 (Merck amp; Co., Inc) 0.5% ,

(ECB) (CF)가

, Ta (202) (210) (201) (209)
 (211) (205) (212) (213) (210)
 n+ -Si (211)
 ITO (203a) () (203b) () (203)
 , Ti가 (203b)
 (203) (203) (203b)
 , ITO (203a) (203) (203) 가
 가 T ITO (207) (203) ITO (203a)
 가 R Mo (214) Al (208)
 . Al (208) 가 150 nm , (90%)
 , 90% , Al (208) 150 nm
 가 (Al (208)) Al Al , Ag, Ta, W
 , ITO(207) Al (208) (206) 가 Al
 Al T R 가 가 , R ()
 Al (208)) 가 (203) (203b)
 가
 (206) 가 T 가 R
 / 가 가
 ITO (207) (206) , (209)
 (202a) . Al (208) Mo (214)
 ITO (207) R , ITO (207) Al ()
 208) , T R TFT(204) 가
 ination line) (discl
 ITO (207) Al (208) Mo (214) ITO (207) Al (208)
 , R T 60:40
 , T R /
 , R (, T R) 10 90%
 10% , , 가
 90% 가 , R
 , T 가
 가
 40 90% . R 40% , R
 , R
 , 10 60% . R

Figure 1 illustrates various thin-film transistor (TFT) structures, labeled (11) through (215). The diagrams show different cross-sectional views of the devices, highlighting the arrangement of layers and components. Key components labeled include gate (가), source (S), drain (D), and various layers like ITO, Al, Mo, and TFT. Some diagrams also show a 60% scale bar and a 100nm scale bar.

37, TFT(204) (203) AI (208)
 (206)(205)
 03) 가, ITO (207) (206) TFT(204) (2
 가 3 μ m, AI (208) 3.6, TFT(204)
 (203) (205) (205)
 ITO (207)

(206) 2 가 T 가
 R (206) 3 가 T, 가 R, 36
 가 (C)

(13)

37 13 38a 38d
 37 J-J
 30, 36 가 R가 10 12
 10 12, TFT

R, 2 2 T T R
 38a 38d

38a (213), (202)(37) (210), (209), (212),
 (211) (205 211) n+ (211) (201)
 (203)(37) (241)

38b (241), (242), - (243), (2
 03) (242) R

38c (244), (244) (245)

38d ITO (246) (246)
 가 (243) (246) (244) (24
 5) 가 (205) 가 (246) (246)
 가 가 T 가 R 가
 가 가 T 가 가

(14)

39 14 40a 40d
 39 K-K

TFT 10 13 가 R(39)
 30 38 10 13

2, R가 R T 2 2 T
가
40a 40d
40a (202)(39) (201) (242) 가 (242) R (210),
40b (205 211) n+ (209), (212), (213), (211)
(203b) (211) (243) (203) TFT(204)
(205)
40c ITO가 가 (246)
(203) ITO (203a) 가 (246) ITO
(203a) (203b) (203b) 가 (246)
(243) FET(204)
40d (247)
2, T R (203) ITO
(203a) (242) ITO (203a) (242) ITO
(가 (T, R))
(가 (246) 가
) 13 가 (가
)
(203) (203b) ITO (203a) (203b)
(203) ITO (203a)
(15)
41 15 42a 42c
41 L-L
(가 /)
10 14 10 14 TFT
41 T R(41) T 가
(202) (203) (202) (203) 10 14
가 (202) (203) R
42a 42c
42a (212), (201) (210), (202)(41), (209)
(213), (211) (205 211) n+ (211)
(202)

(203) 가 .

42b , (244) , (244) (245)

42c , ITO 가
가 (246) 가 (246) (245) (243) ,
(243) TFT(204) (205) , 가 (246) (202)
(203) (246) (202) / (203) (244) 가
(246)

가 가 가 (246) (203)

2) (203)

, T R 가 가 /

(16)

43 16 44a 44f
43 M-M ,

43 T (203) 2 R(43 T)

44f , R가 (201) (253a), (253b),
(253a, 253b) (254), (254) 가 , (2
(242) (R) (205) (242)

45) (44a 44f

44a , Cr, Ta (202) (202)
(210) (201) SiNx (209) (202) (210)
(210) (209) (a-Si), CdS
e (212) (212) (213)
a-Si (248) , (212)

(248) Ti, Mo, Al (249) , (24
8) Ti, Mo, Al (205)

, (201) , 1.1 mm 가 (7059)

44b , (203)
(203b) (250) (250) (209)
(202)

(202) (202) 가 ,
(R) 가

44c ITO가 (203b) (203)
ITO (203a) .
(203b) (203) (203b) ITO (203a) 가 .
(203) 가 (203) ITO (203b)
ITO (203a) (246)
, 가 (246) (203) .

44d (252)
(253a) (253b)가 R
(253a, 253b) 가 (246)
(253a, 253b) (246) ,

44e (253a, 253b) (254) . R

44f (254) Al Al (242)
, 가 (242) Al Al , 가 Ta, N
i, Cr Ag .
가 (242) 0.01 1.0 μ m .
, 가 (242) R , 가 T (203) ITO (203a)
가 (242) , ITO (203a) 가 (242) -
(,) 가 T R
, 가 (242) 가 (252) 가 , 가 (242)
가 (242) 3 (, Mo)가 Al Al
가 (246) , ITO , Al Al .
, Al
(17)

45 17 . 46 45
N-N .

45 46 (202) , (203) (206) (206)
(202) (203) , (206)

(206) (202) (203) (244) .
(202) (203)

TFT(204) (206) TFT(204) (210) (202) (203)
) (210) TFT(204) . TFT(204) (249) (203)
(245) (206) TFT(204) (205) (255)
(255) (209) (215)

(215) , ()
 (215)
 (206) Al Al (242) ITO (246)
 (206) , T R(45
) (242)
 R (202), (203), TFT(204), (215)
 가 , T
 T R R 가
 가
 , (210), (202), (215), (209), (212), (213), (249), (205)
 , (203) (255)
 ,
) , (203) ITO (203a) (203b) (203b
 가 (203) ITO (203a)
 (203)
 , 가 3 μ m (244)
 , (245)
 (245)
 (244)
 , (244)
 ,
 ,
 , ITO (206) (246) (206) (246)
 , (245)
 , Al Al (242) R (246) , (202)
 (202), 9203), TFT(204), (206)
 (203)
 46 , (256)
 ,
 (203) , (206) R TFT (242), (202),
 (202), (203), (215) TFT 가
 ,
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(18)

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48a 48c . 48a , 48b 48

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51a 51b .

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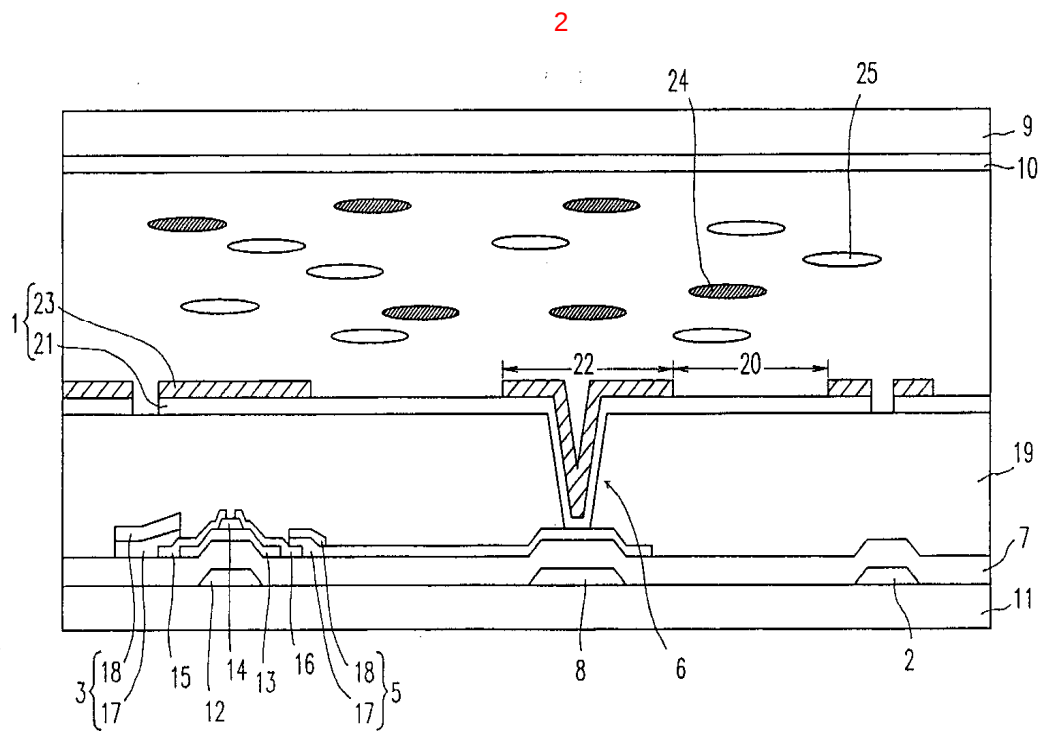
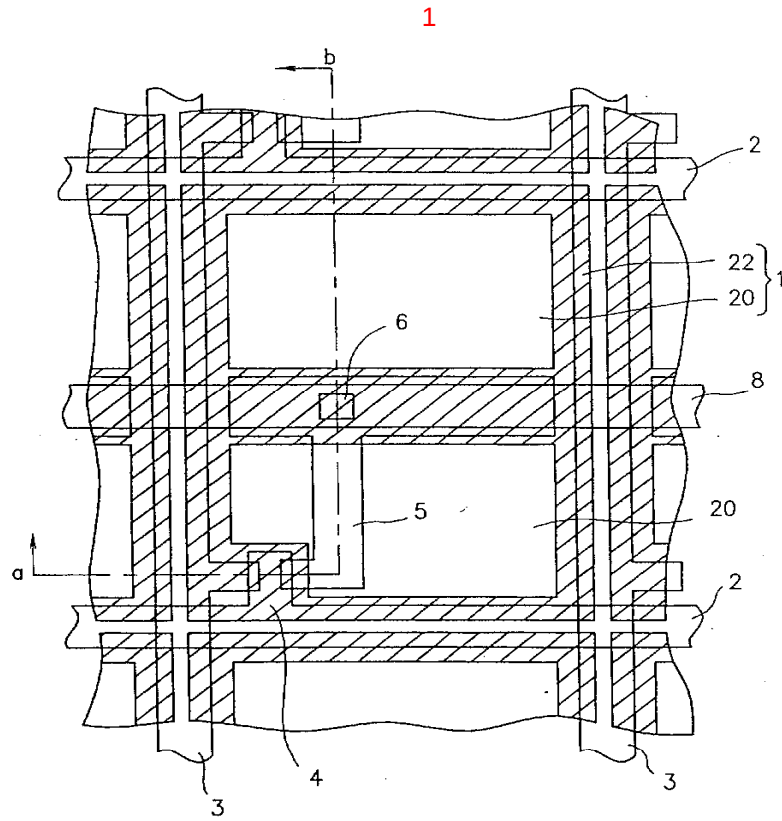
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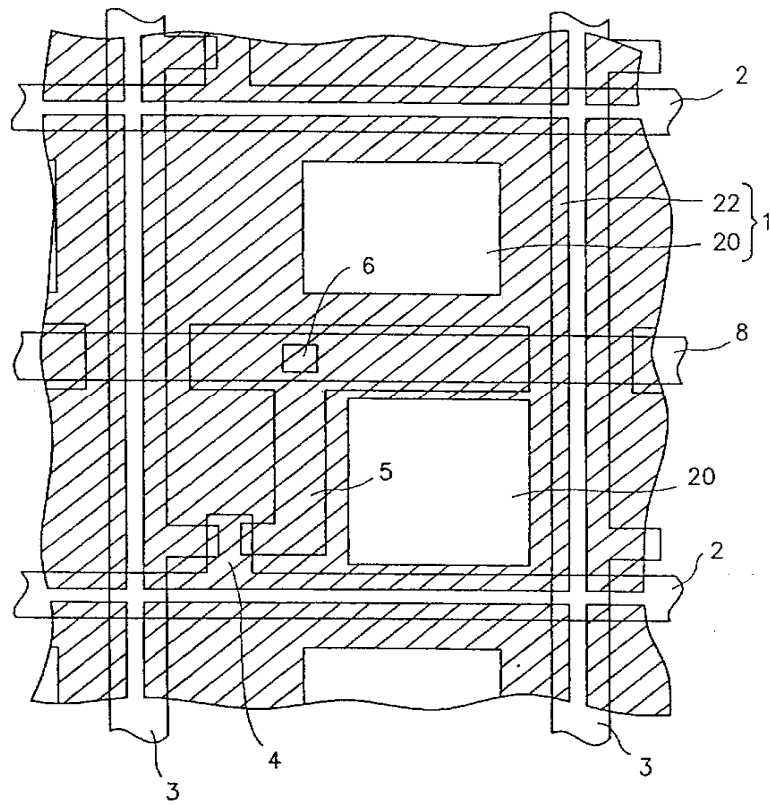
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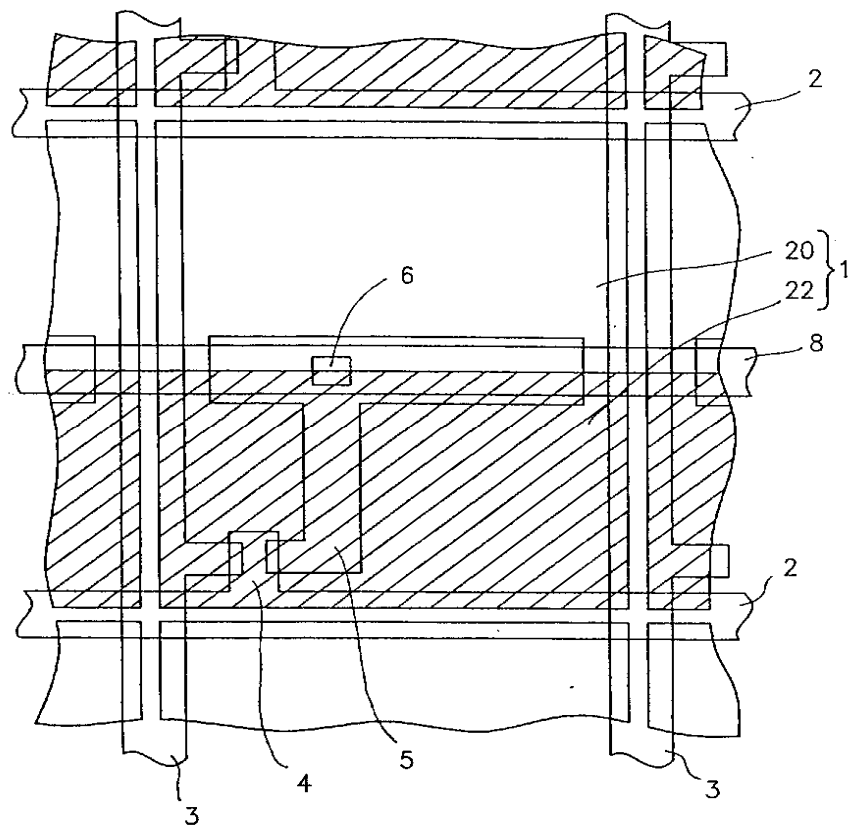
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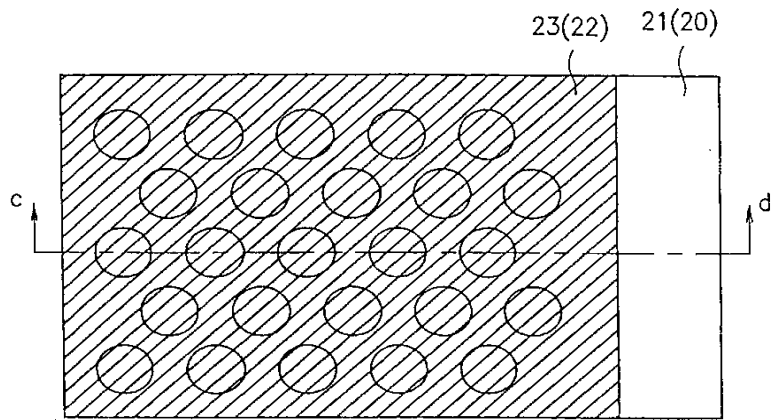
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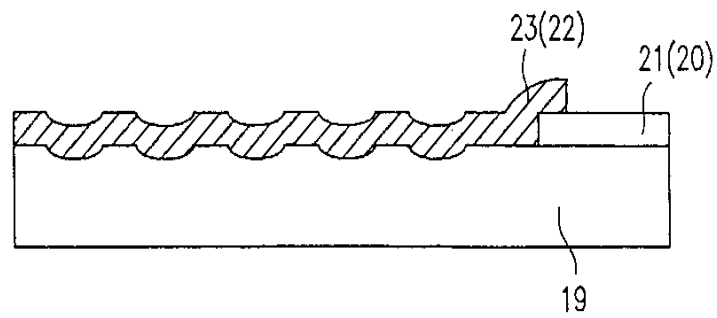
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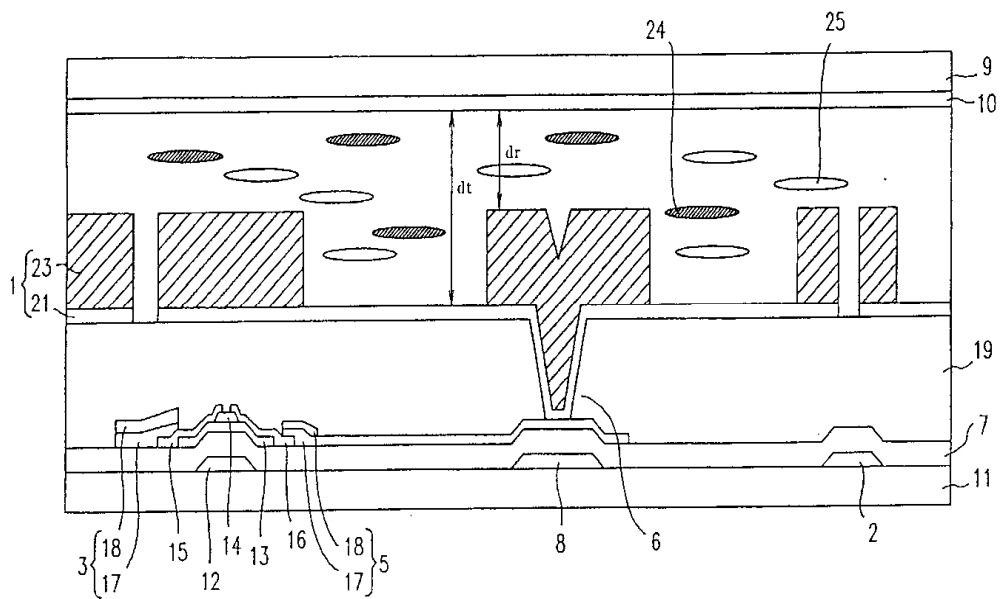
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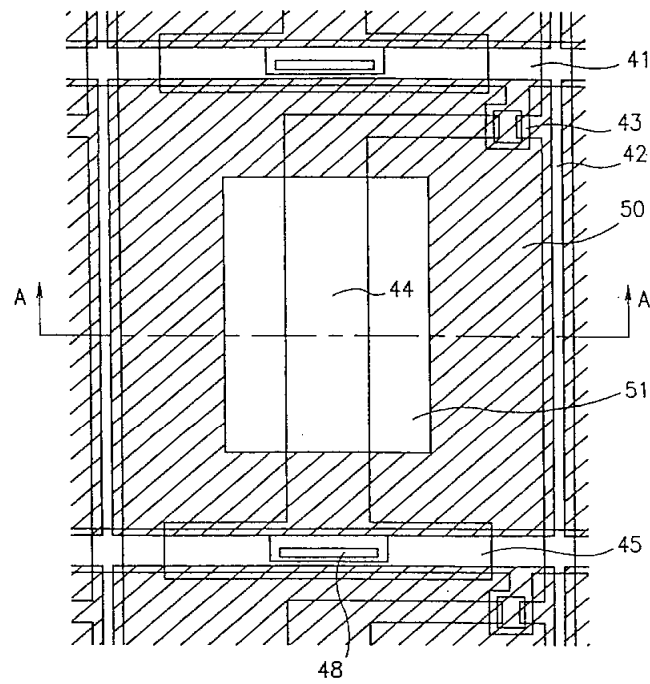
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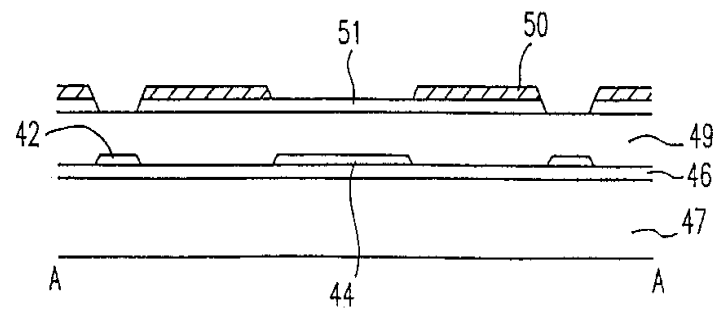
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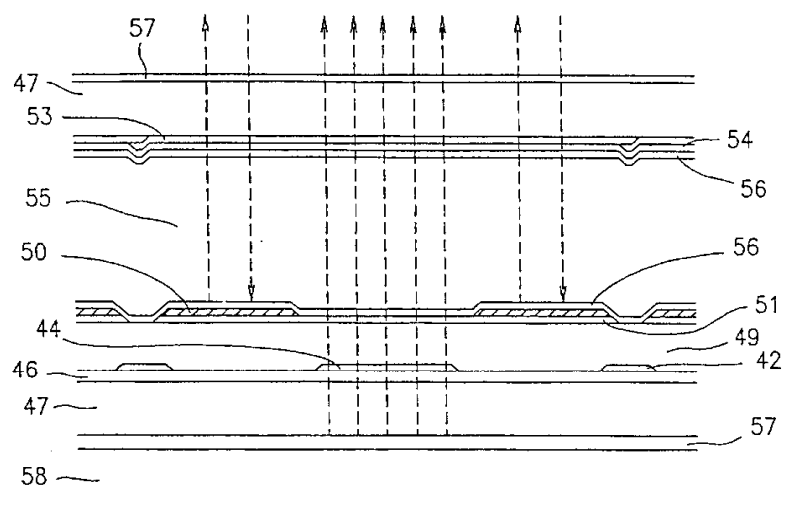
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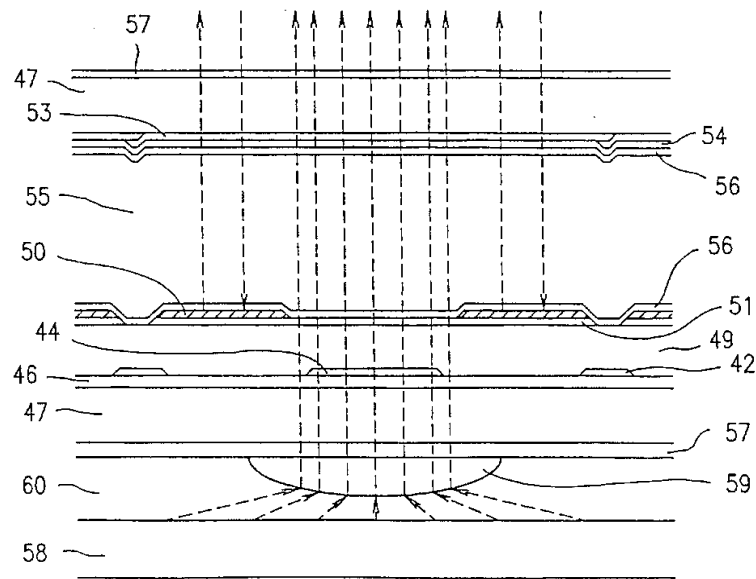
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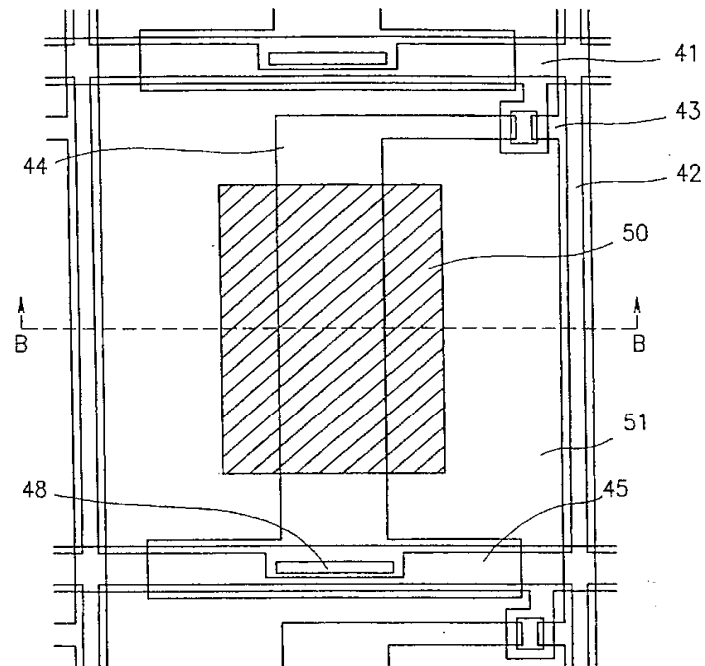
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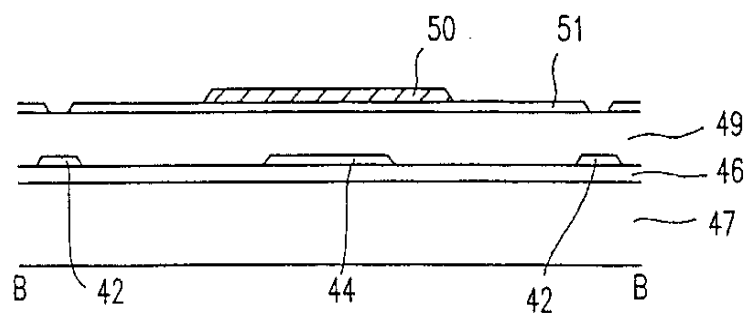
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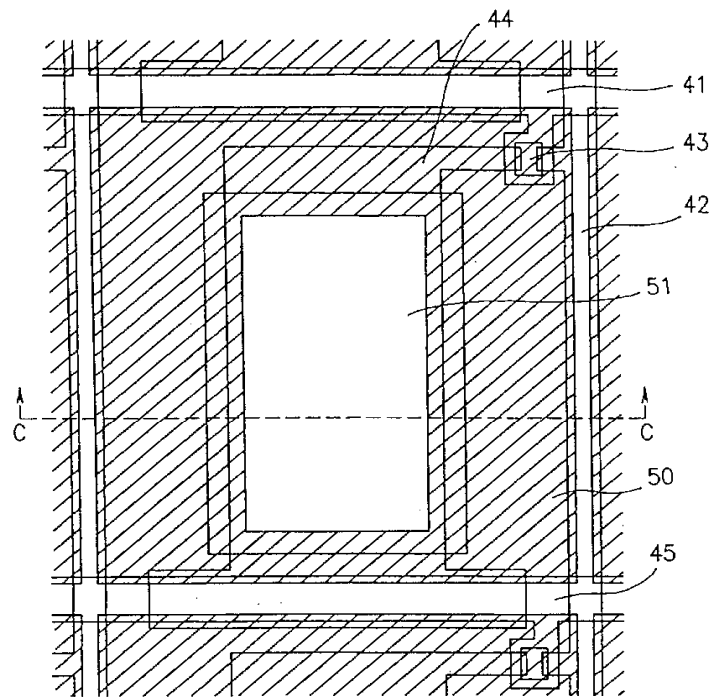
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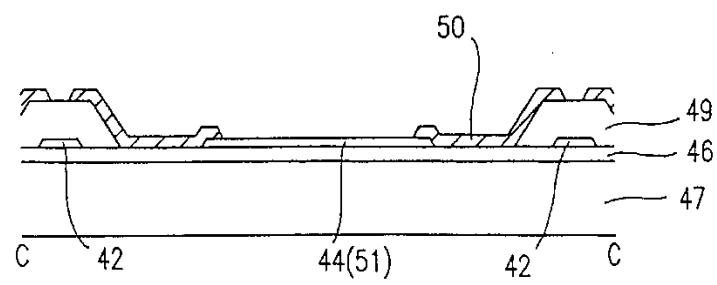
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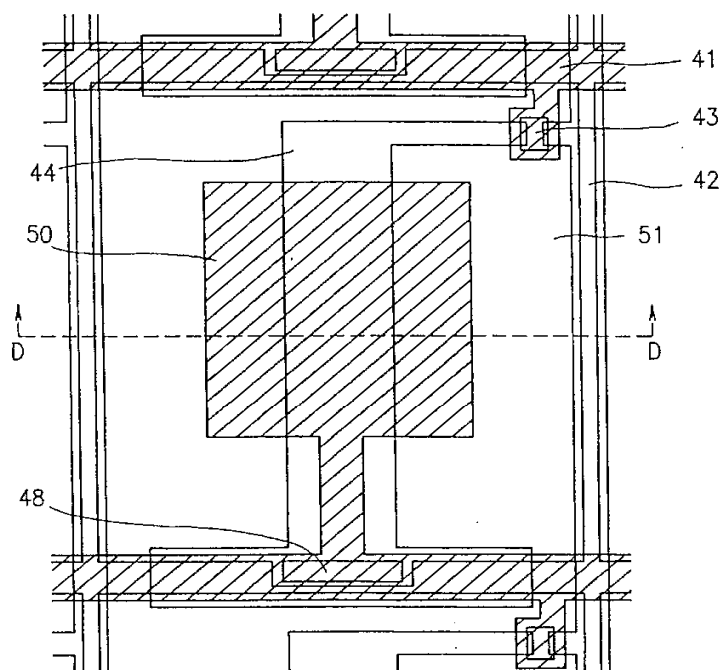
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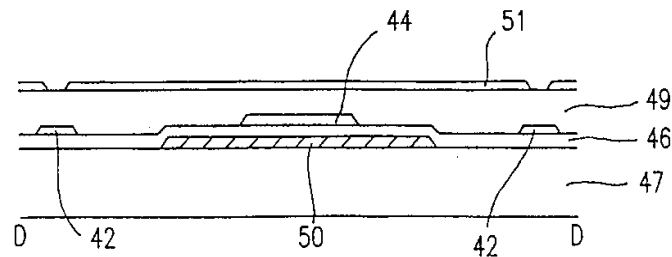
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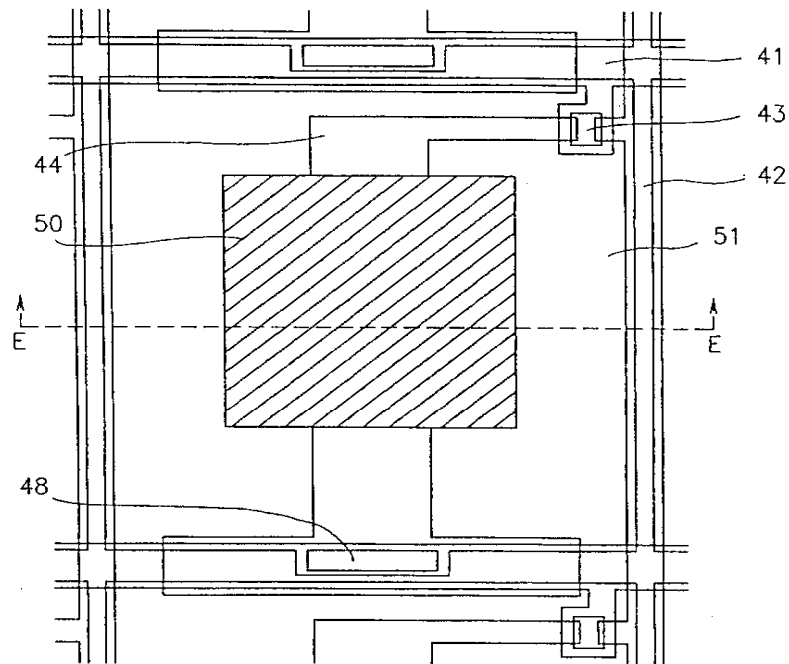
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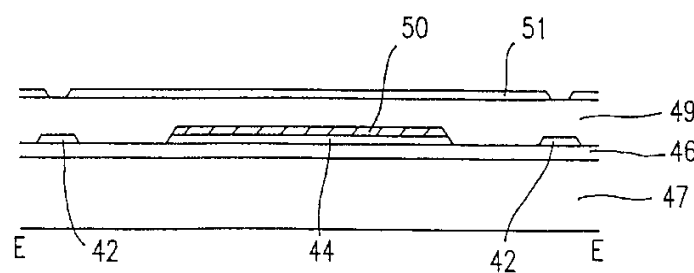
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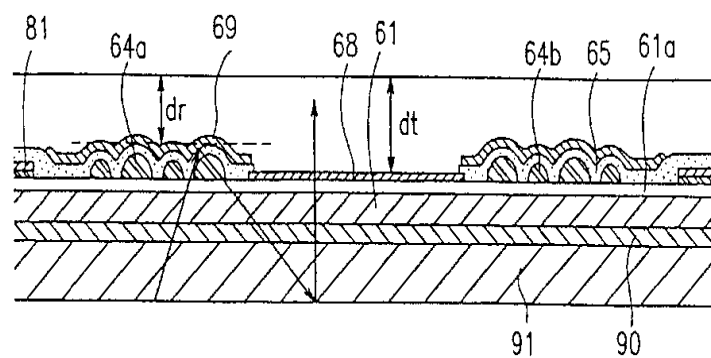
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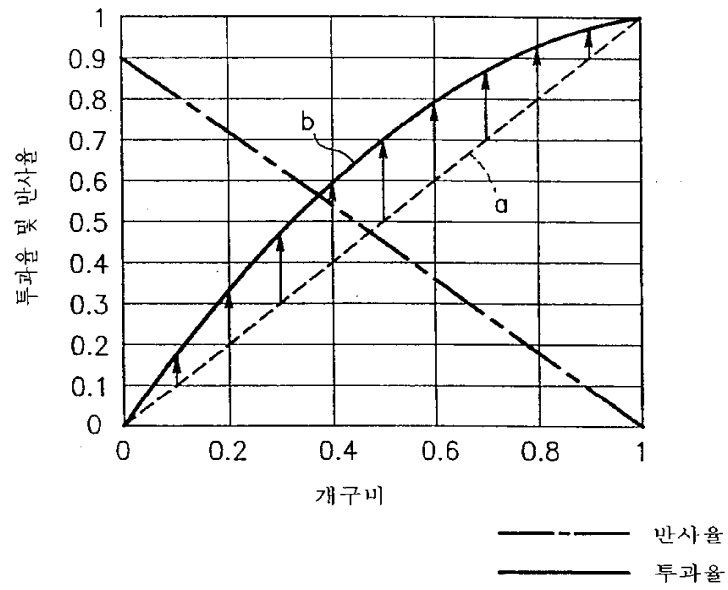
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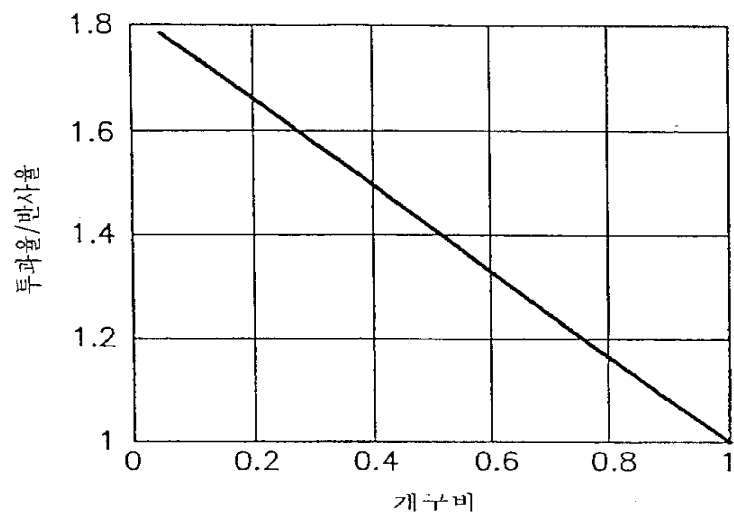
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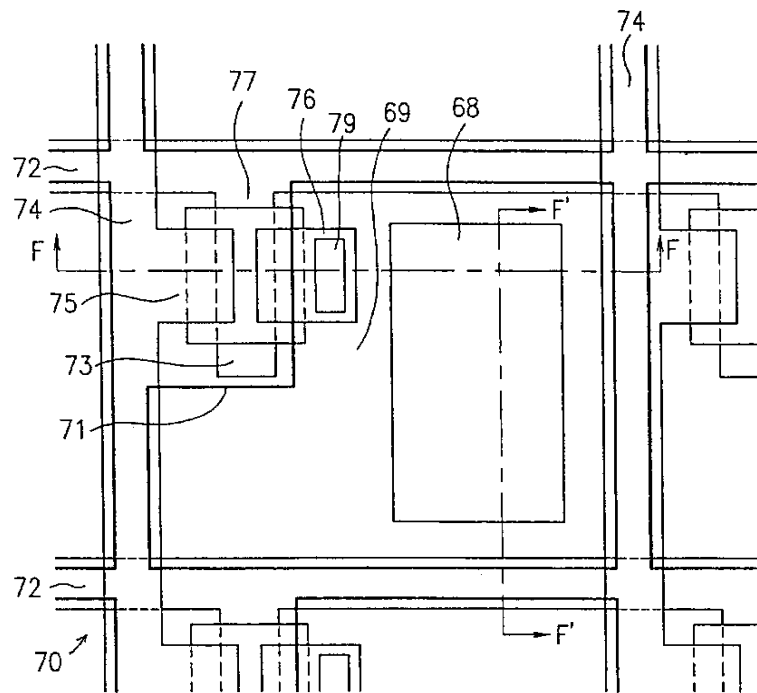
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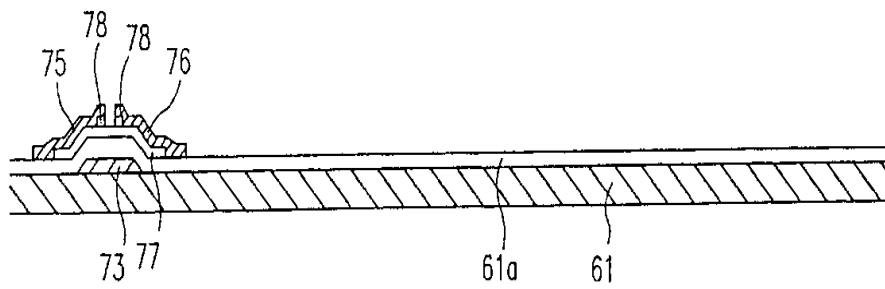
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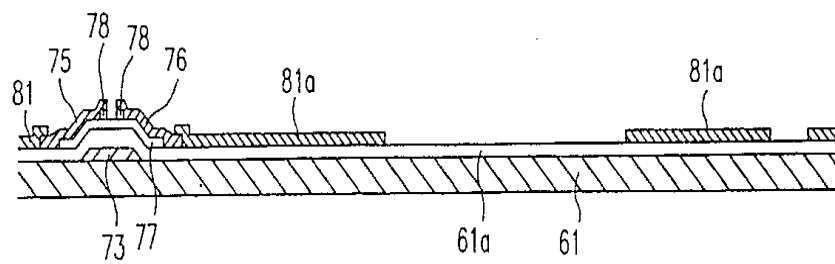
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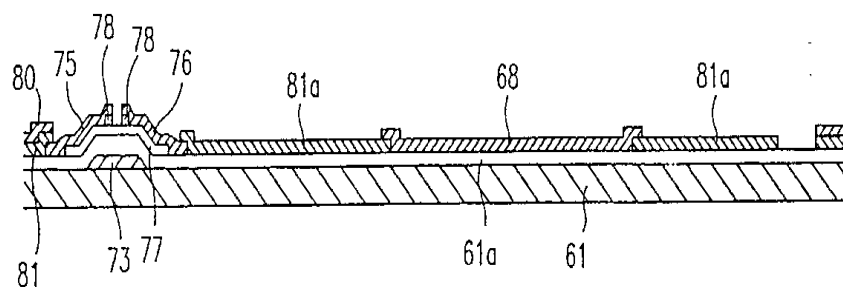
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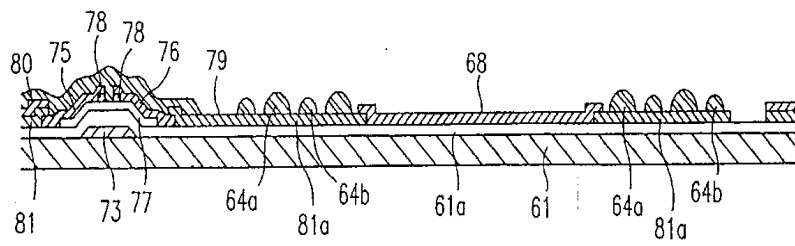
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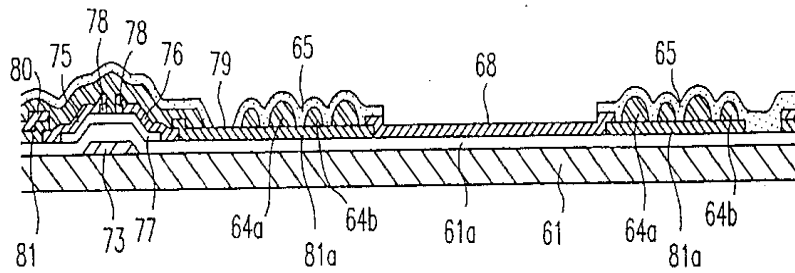
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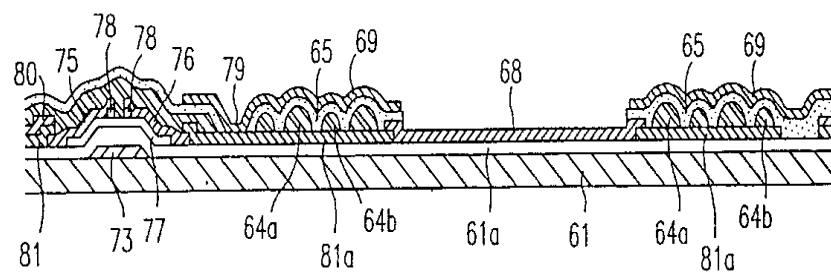
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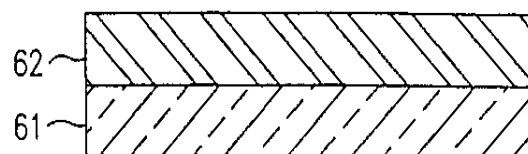
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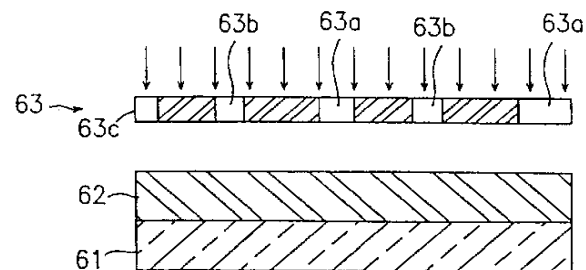
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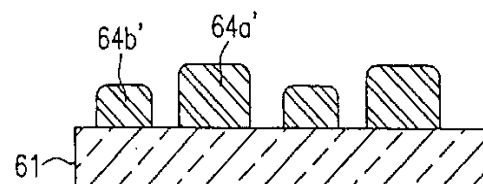
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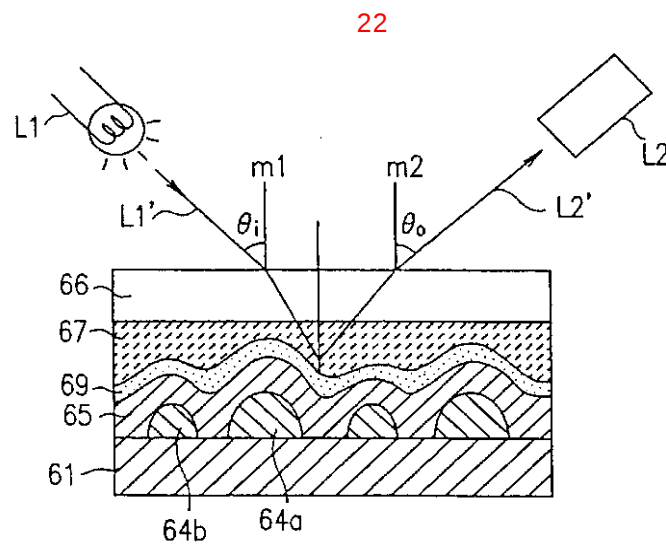
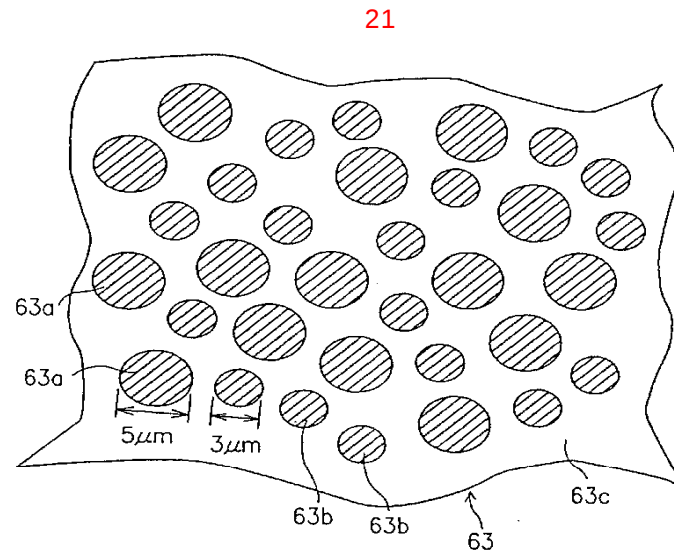
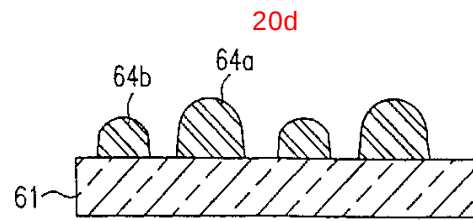


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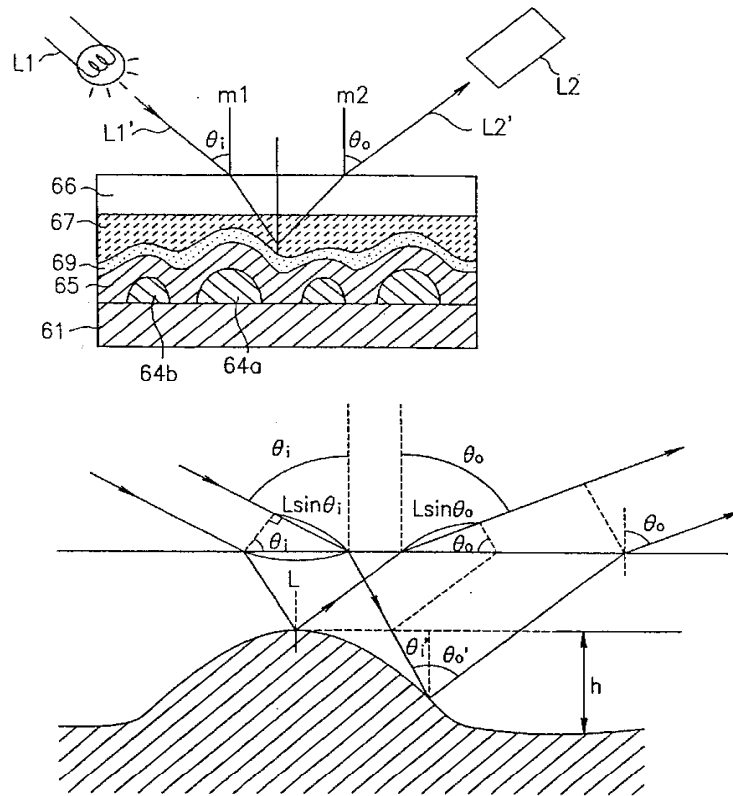


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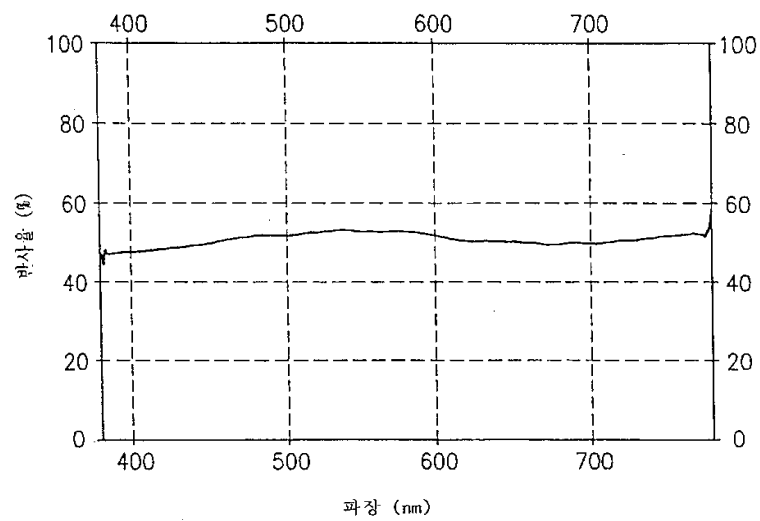




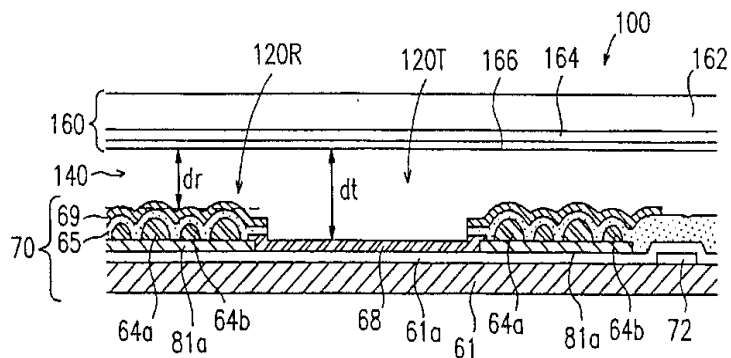
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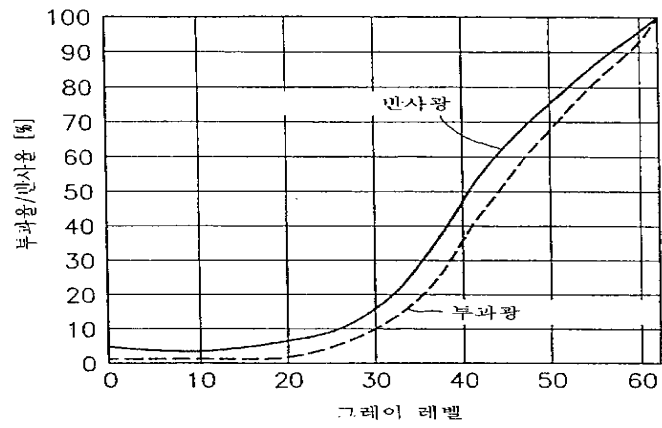
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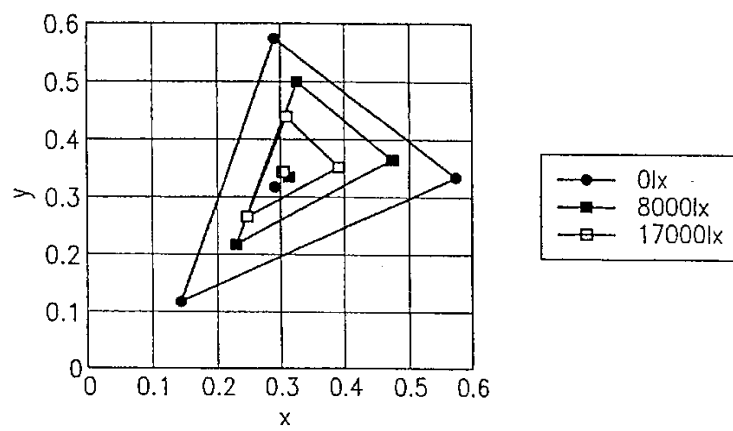
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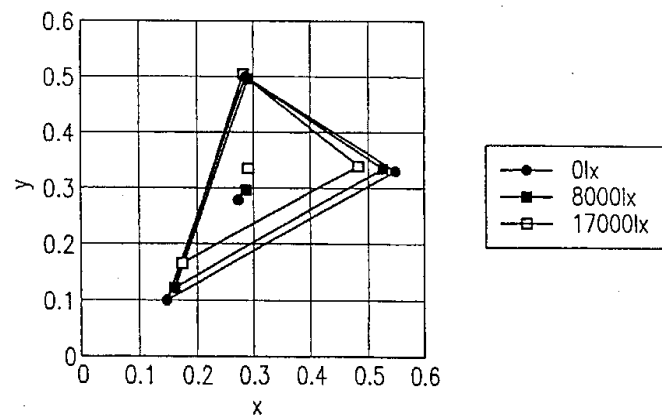
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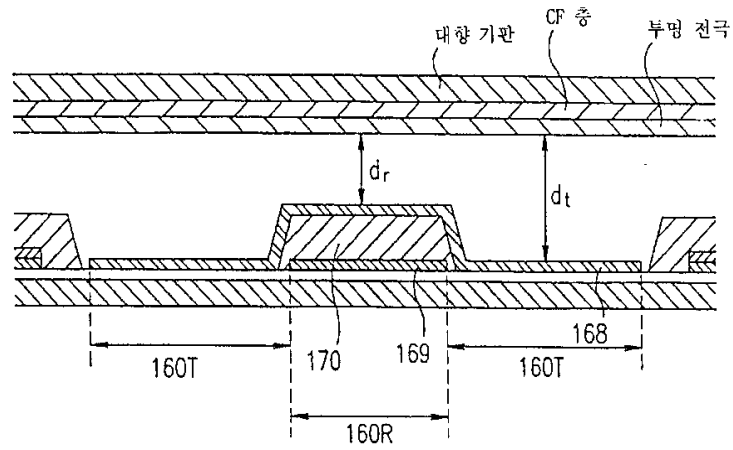
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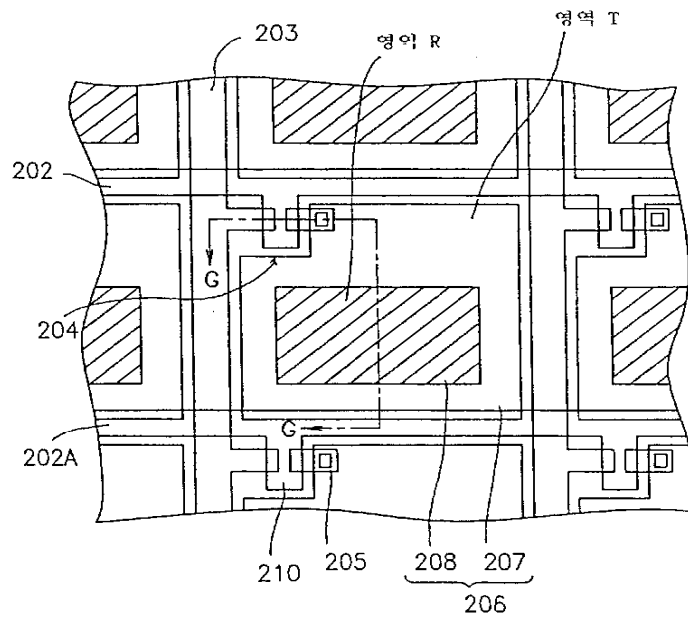
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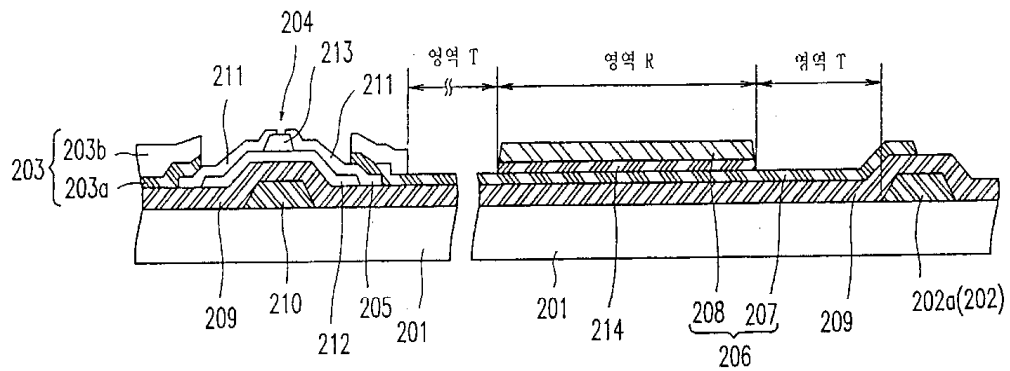
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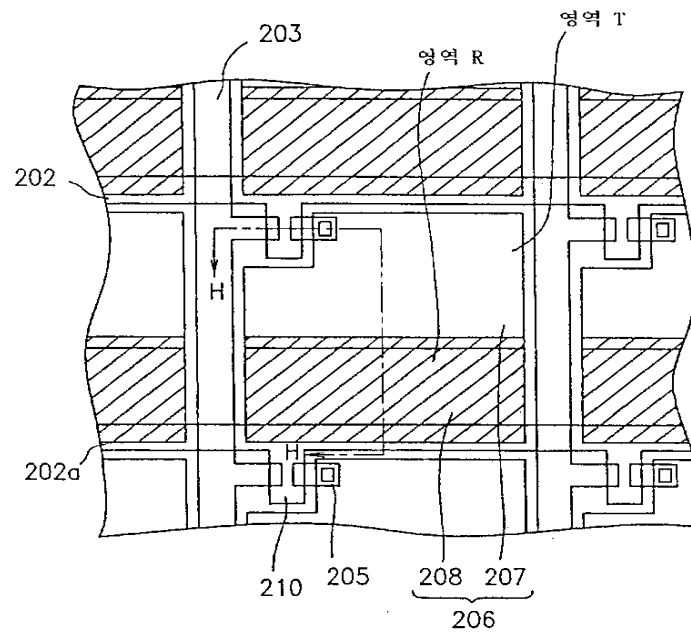
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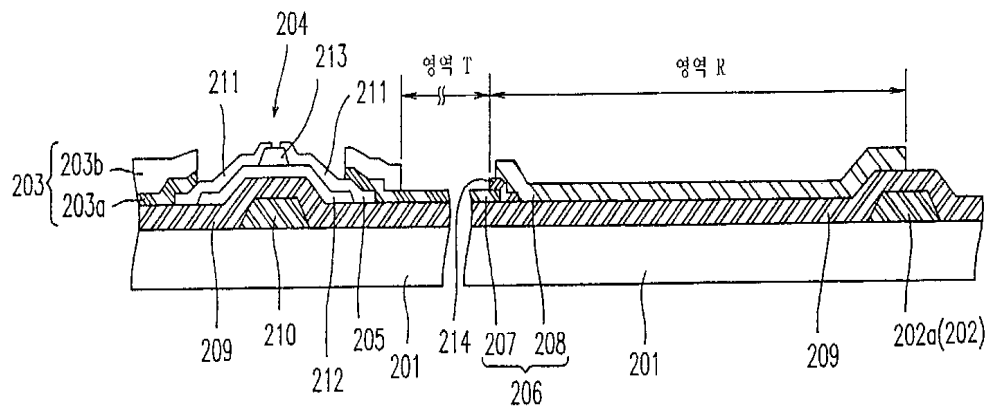
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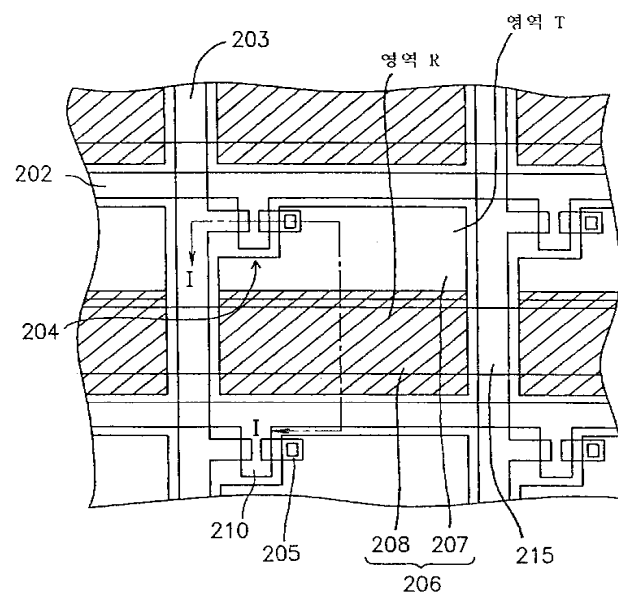
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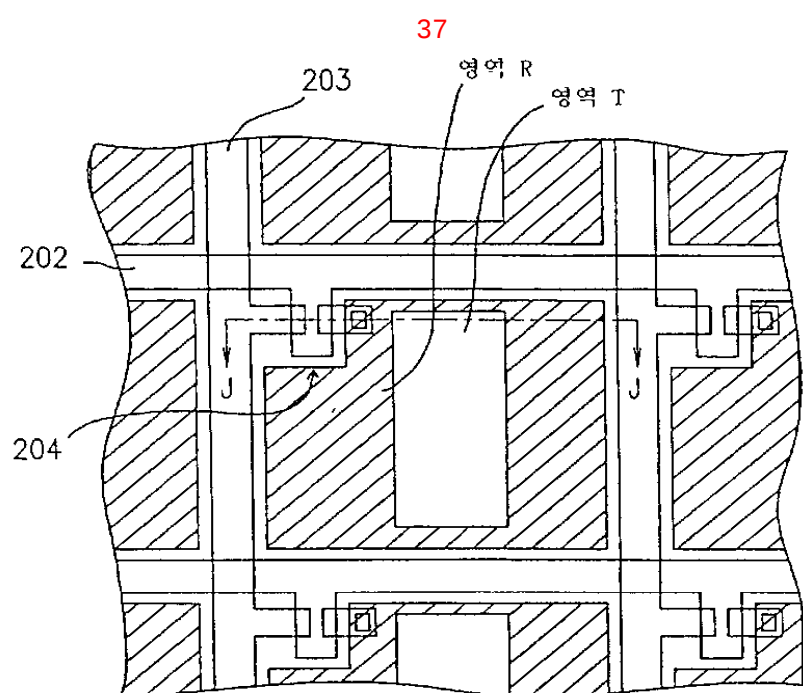
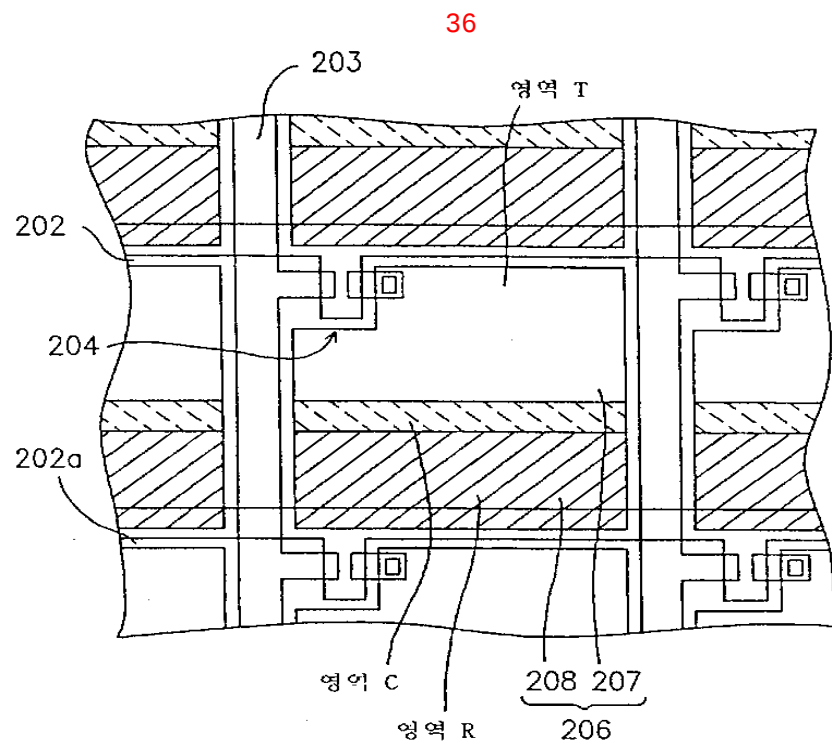
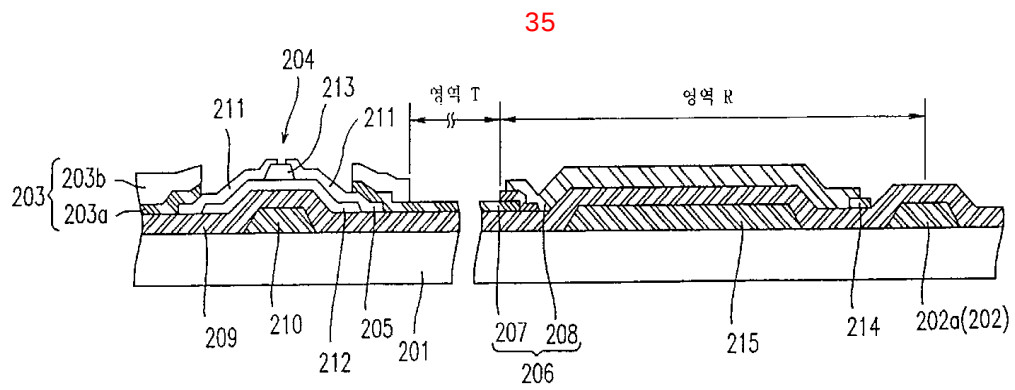


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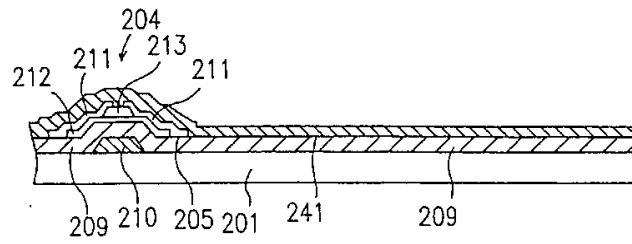


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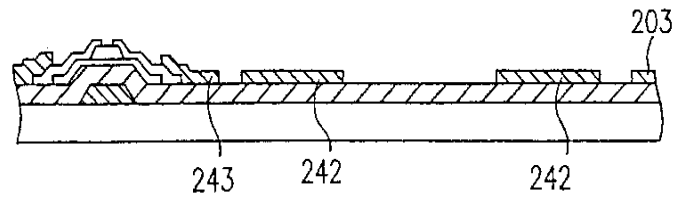




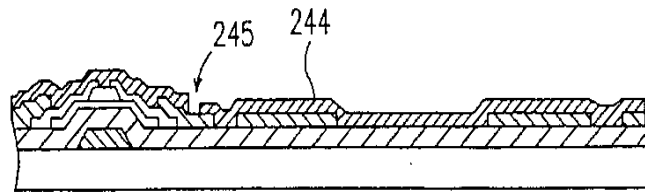
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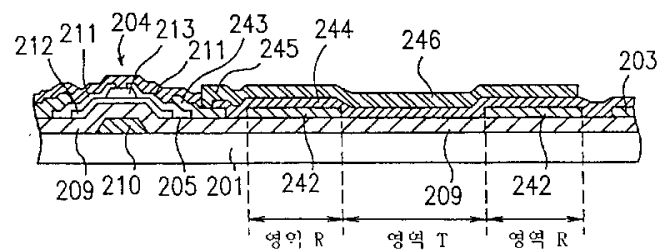
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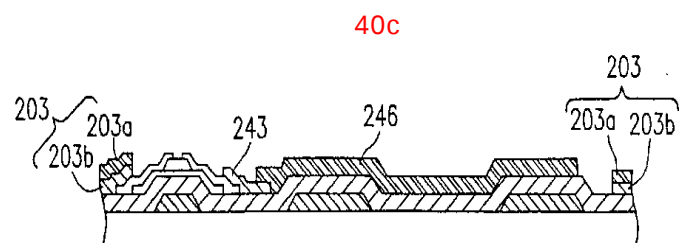
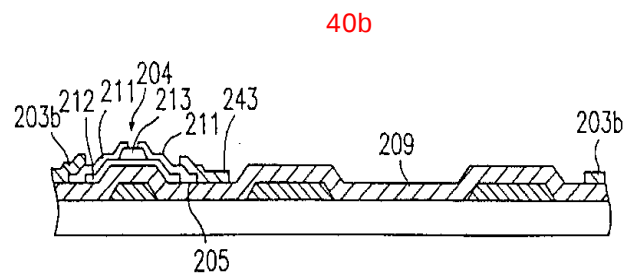
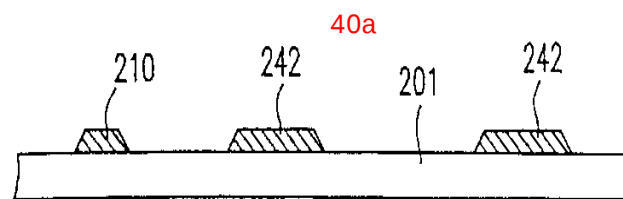
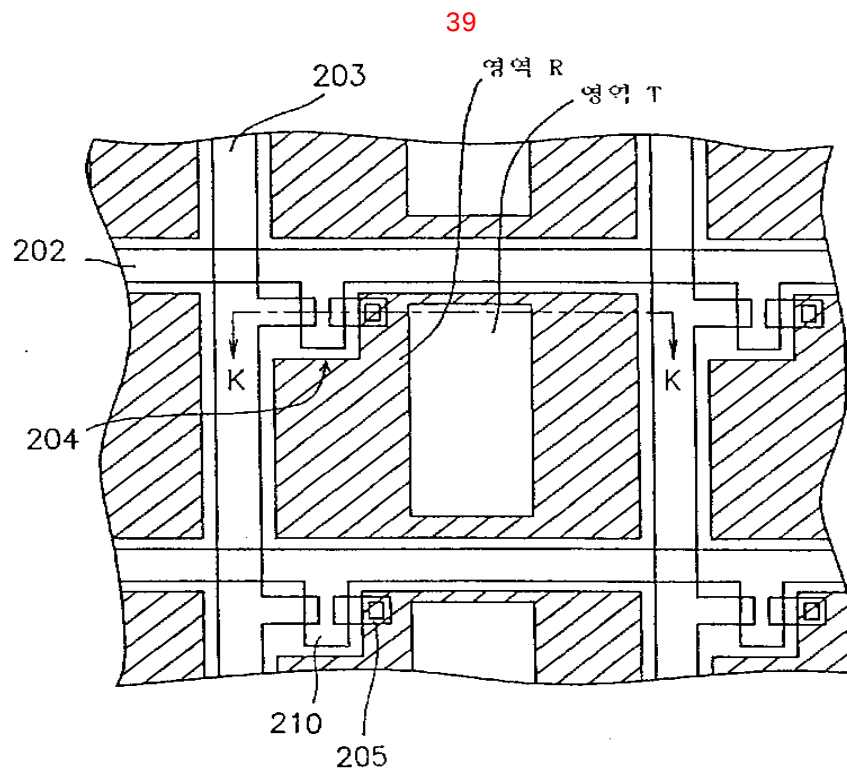


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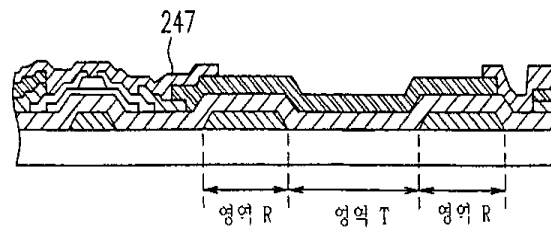


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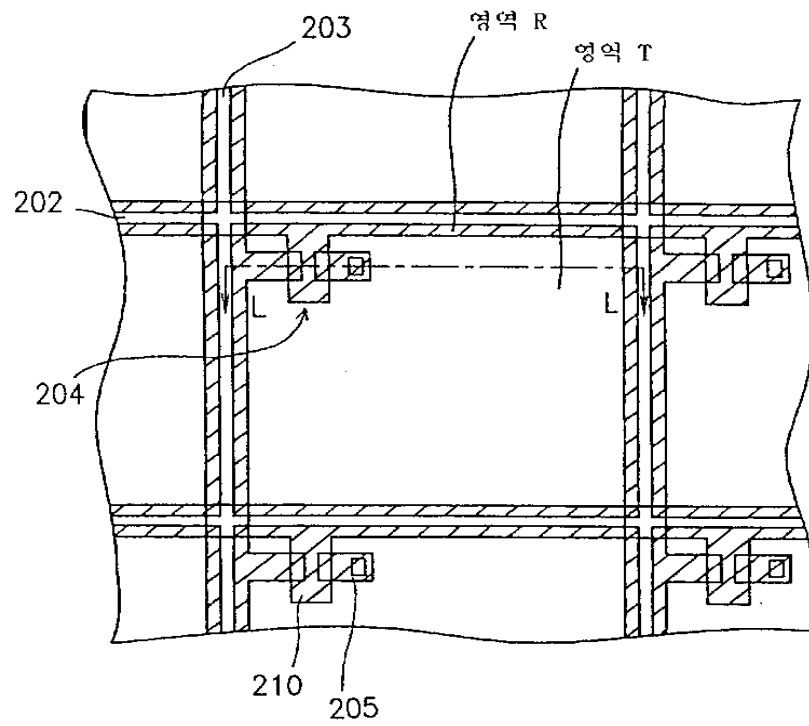




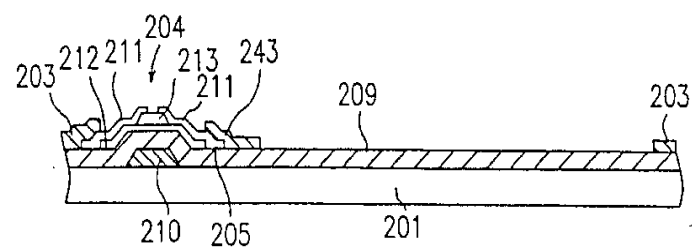
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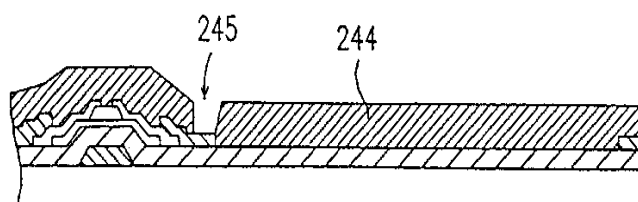
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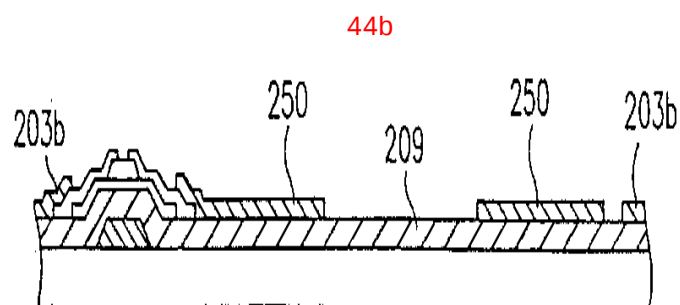
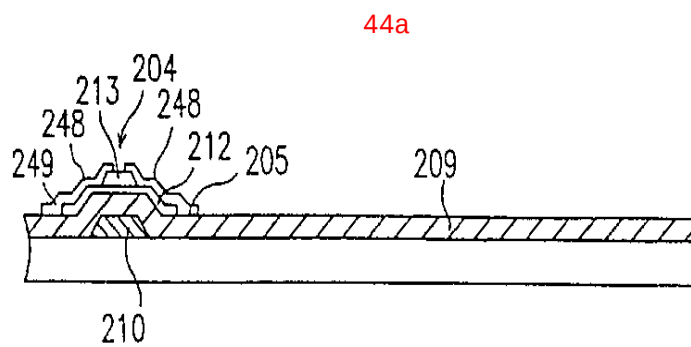
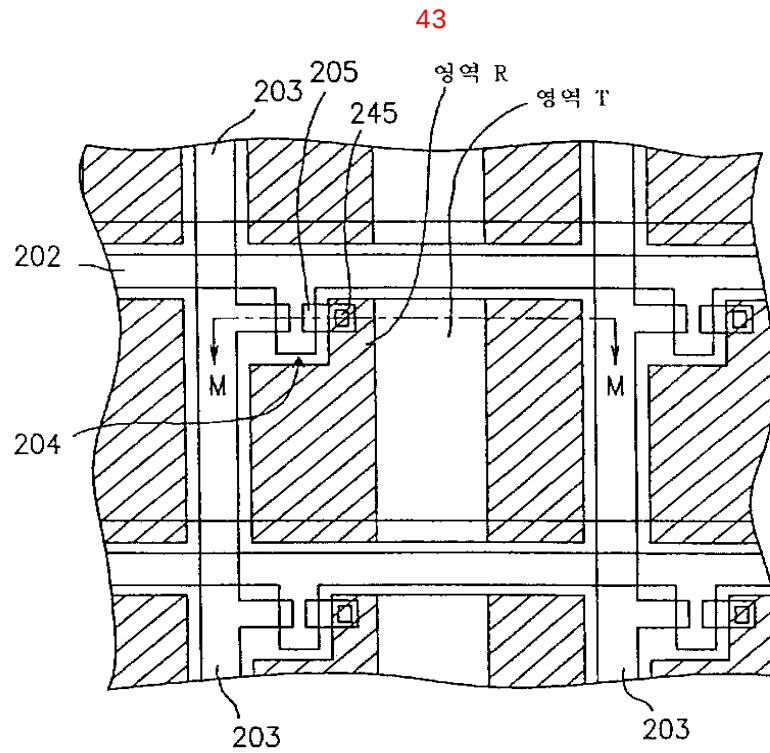
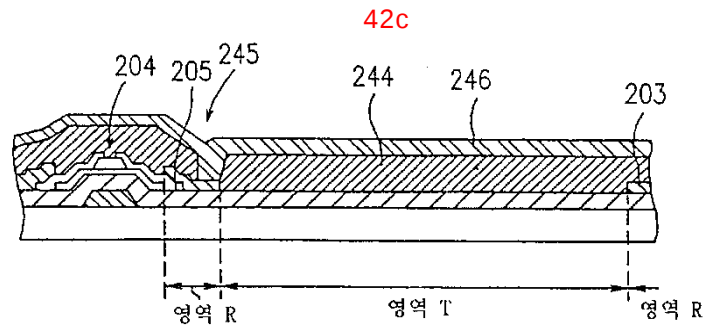


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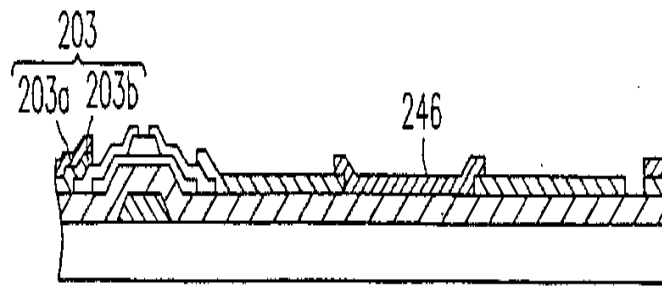


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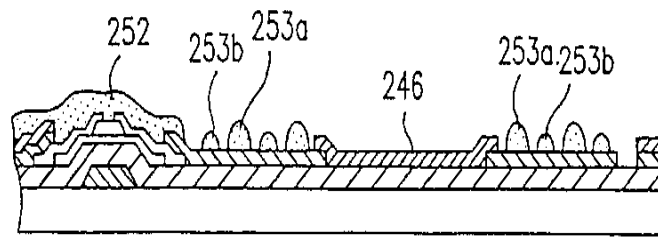




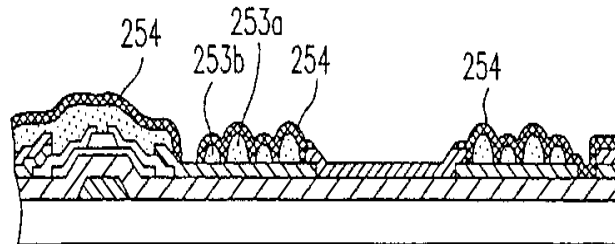
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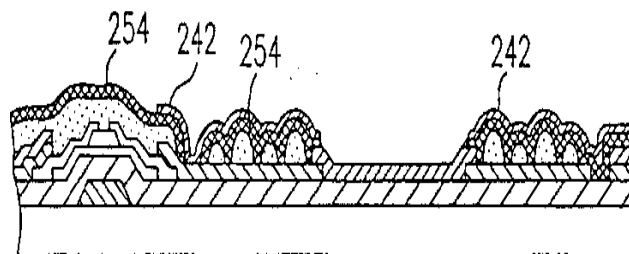
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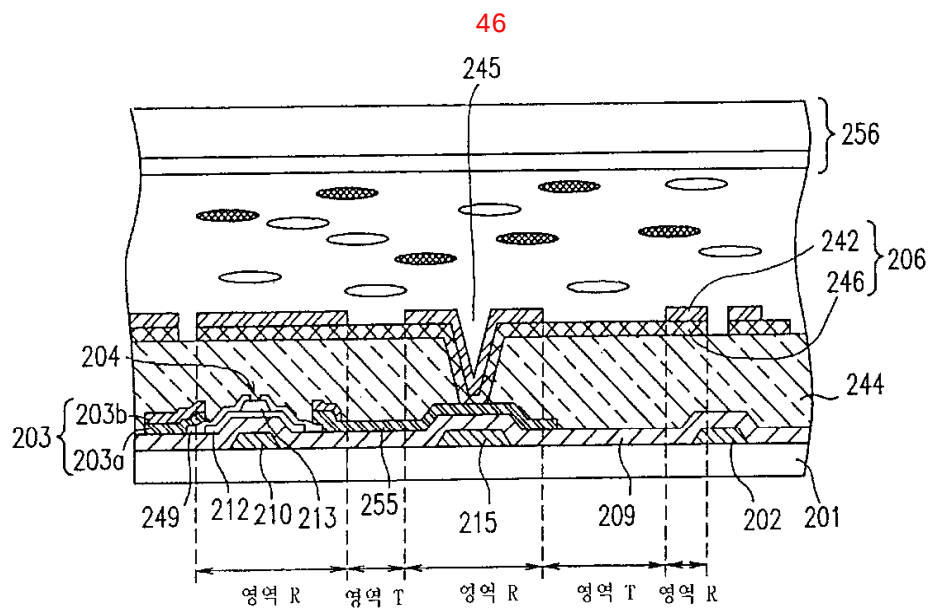
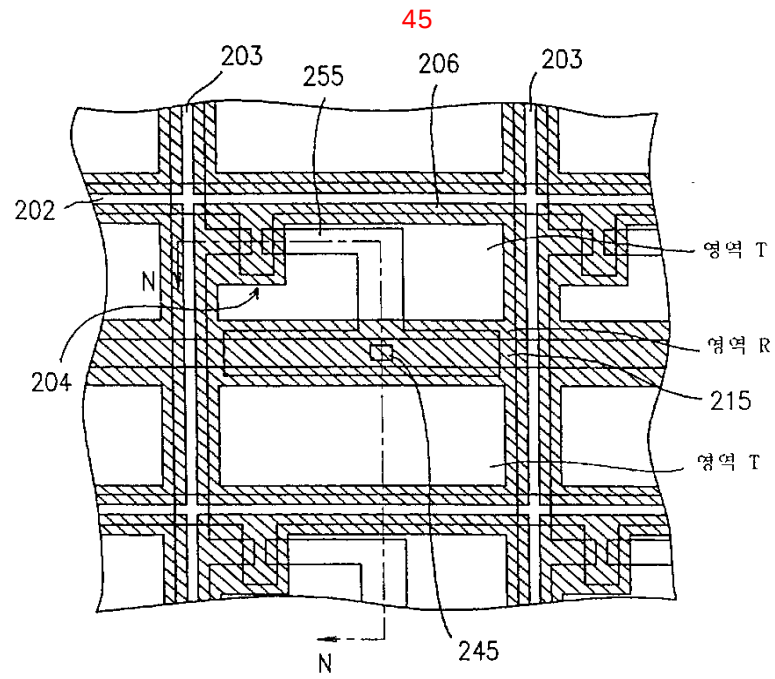


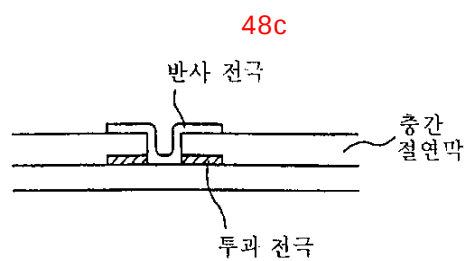
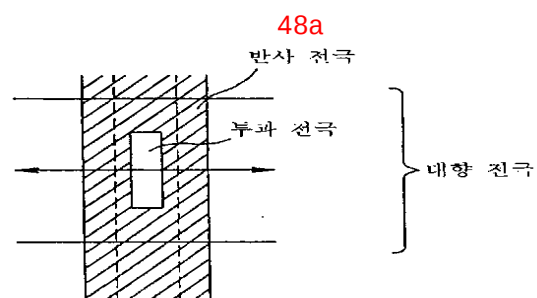
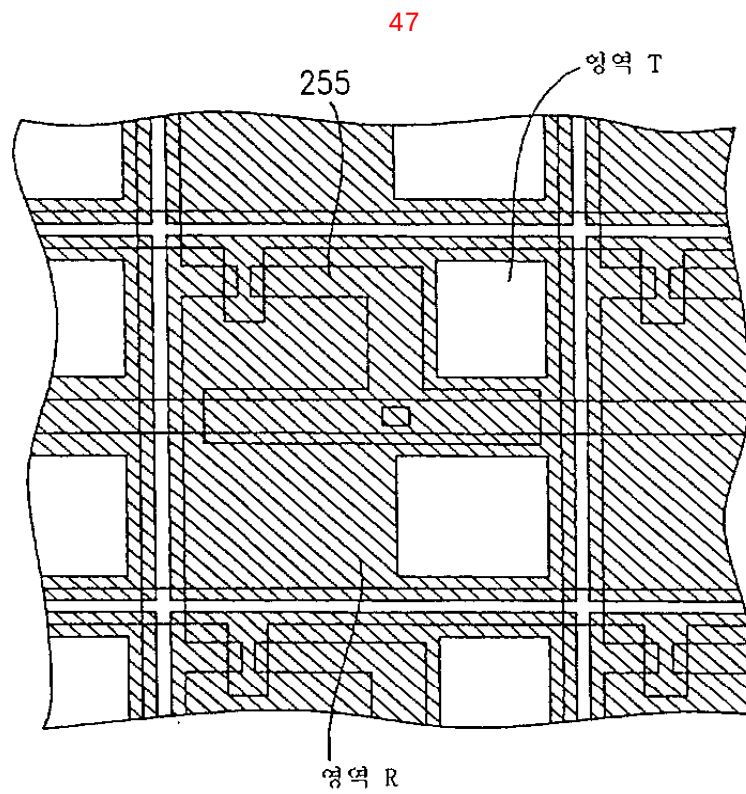
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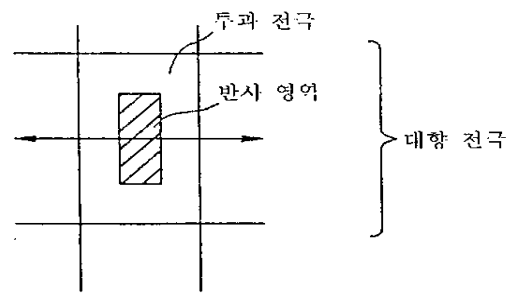
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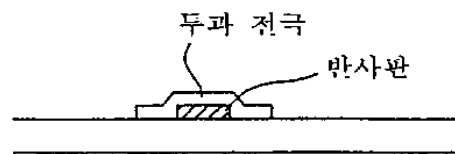




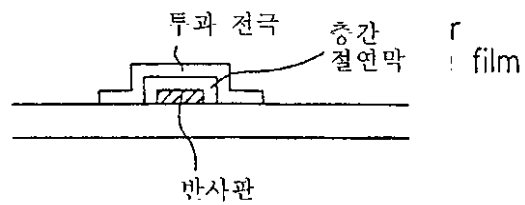
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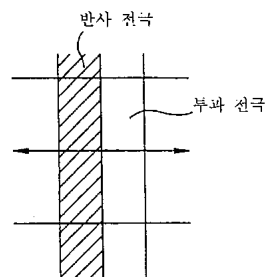
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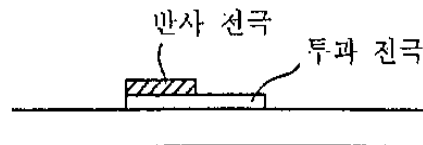
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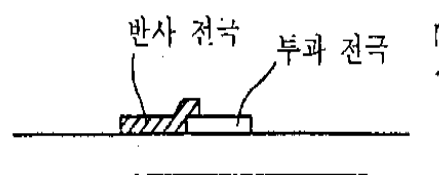
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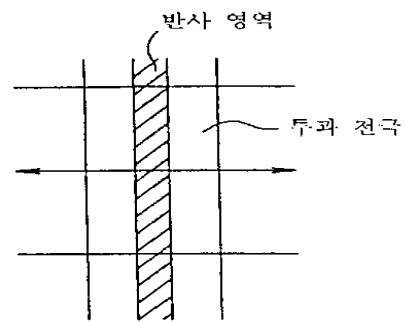
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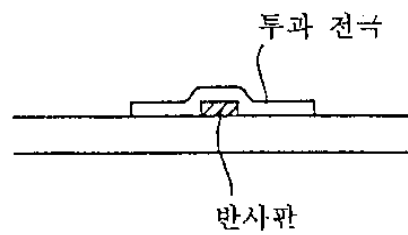
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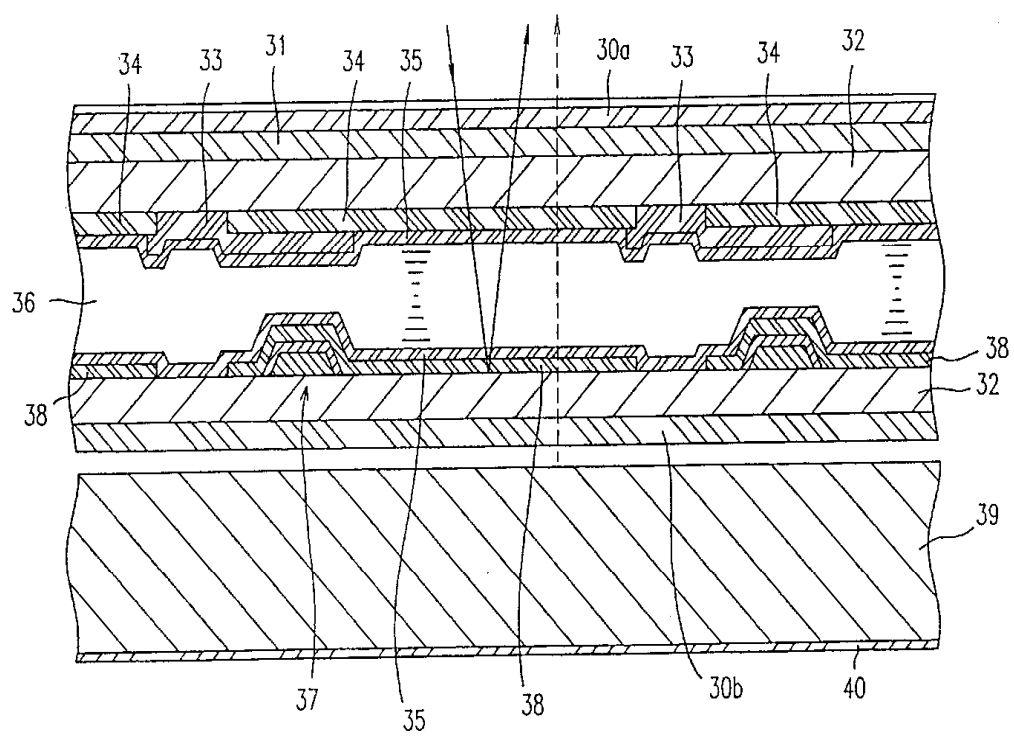


51b



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(종래 기술)



专利名称(译)	液晶显示器		
公开(公告)号	KR1020040039500A	公开(公告)日	2004-05-12
申请号	KR1020020056787	申请日	2002-09-18
[标]申请(专利权)人(译)	夏普株式会社		
申请(专利权)人(译)	夏普株式会社		
当前申请(专利权)人(译)	夏普株式会社		
[标]发明人	KUBO MASUMI 구보마스미 NARUTAKI YOZO 나루따끼요조 BAN ATSUSHI 반아쯔시 SHIMADA TAKAYUKI 시마다다까유키 YOSHIMURA YOJI 요시무라요지 KATAYAMA MIKIO 가따야마미끼오 ISHII YUTAKA 이시이유타까 NISHIKI HIROHIKO 니시키히로히꼬		
发明人	구보마스미 나루따끼요조 반아쯔시 시마다다까유키 요시무라요지 가따야마미끼오 이시이유타까 니시키히로히꼬		
IPC分类号	G02F1/139 G02F1/1362 G02F1/1343 G02F1/1335 G02F1/13363 G02F1/137 G02F1/133		
CPC分类号	G02F2001/13712 G02F1/133526 G02F1/136227 G02F1/13725 G02F1/133555 G02F2001/133638 G02F1/136209 G02F1/13439		
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优先权	1997201176 1997-07-28 JP 1997274327 1997-10-07 JP 1998016299 1998-01-29 JP 1998018781 1998-01-30 JP 1998075317 1998-03-24 JP 1998117954 1998-04-28 JP		
其他公开文献	KR100451065B1		
外部链接	Espacenet		

摘要(译)

根据本发明的液晶显示器具有包括液晶层的多个像素区域，并且在该间隔中插入液晶层对的基板并且它们相互面对并且由成对电极布置并规定只要它授权液晶层中的电压。并且像素区域具有透射区域和反射区域。一侧板包括透射电极，该透射电极在透射区域中穿过来自光源的光，并且反射电极在反射区域中反射外部光，并且透射电极和反射电极在反射区域和透射区域的边界处获得启发。液晶显示器，反射区域，透射区域，反射区域，透射区域。

